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DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/745,293

Applicant(s)

ZHANG ET AL.

Examiner

LaShonda T Jacobs

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-59 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-59 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Amendment*

This is a Final Office Action in response to Applicant's Amendment and Request for Reconsideration filed on October 12, 2004. Claims 1-59 are presented for further examination.

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Valencia in view of Puthiyandyil et al (hereinafter, "Puthiyandyil", 6,763,018) and in further view of Heimendinger et al (hereinafter, "Heimendinger", 6,278,532).

As per claims 1, 41 and 59, Valencia discloses a method, system and program storage device for providing computer network access, comprising:

- receiving a PPP session creation request from a client, said PPP session creation request including a control protocol frame encapsulated therein (col. 4, lines 1-33 and col. 7, lines 55-65);
- obtaining user domain information associated with said PPP session creation request (col. 4, lines 45-65);
- setting up a Layer 2 tunnel according to a parameter contained in said control protocol frame (col. 4, lines 1-33 and col. 5, lines 35-42); and

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- forwarding data packets from a PPP session with said client over said Layer 2 tunnel (col. 4, lines 1-33 and col. 7, lines 55-65);

Although the system disclosed by Valencia shows substantial features of the claimed invention it does not explicitly disclose:

- forwarding IP frames received from said client over a link other than said Layer 2 tunnel.

In an analogous art, Puthiyandyil discloses a distributed protocol processing and packet forwarding using tunneling protocols including:

- forwarding IP frames received from said client over a link other than said Layer 2 tunnel (col. 8, lines 40-48, lines 60-67, col. 9, lines 1-19).

Given the teaching of Puthiyandyil, it would have been obvious to one of ordinary skill in the art at the time this invention to modify Valencia by forwarding IP data packets over the control LAN in order to process several PPP sessions simultaneously thereby enabling the network server to operate at higher levels of efficiency.

While the combined system of Valencia and Puthiyandyil, substantially discloses the invention as claimed discussed above, it does not explicitly disclose:

- creating an ingress PPP object associated with an incoming PPP session, a host object associated with said client, and an egress PPP object associated with said Layer 2 tunnel;
- creating an egress IP object based upon obtained user domain information, said egress IP object associated with IP-based forwarding;
- linking said ingress PPP object, said host object, and said egress PPP object; and

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- linking said host object and said egress IP object.

Heimendinger discloses an apparatus and method for reception and transmission of information using different protocols including:

- creating an ingress PPP object associated with an incoming PPP session, a host object associated with said client, and an egress PPP object associated with said Layer 2 tunnel (col. 7, lines 15-32 and col. 16, lines 32-67; The session object (ingress PPP object), 316, source object (host object) 312 and destination PPP object (egress PPP object) of Heimendinger meets the definition of the ingress, host and egress objects defined by the applicants' specification on pg. 12, lines 11-16);
- creating an egress IP object based upon obtained user domain information, said egress IP object associated with IP-based forwarding (col. 7, lines 15-32 and col. 16, lines 32-67; The session object (ingress PPP object), 316, source object (host object) 312 and destination PPP object (egress PPP object) of Heimendinger meets the definition of the ingress, host and egress objects defined by the applicants' specification on pg. 12, lines 11-16. Heimendinger teaches that the objects are created are based on information received from the session object when dialing a number to establish a PPP connection);
- linking said ingress PPP object, said host object, and said egress PPP object (col. 7, lines 15-32 and col. 16, lines 32-67); and
- linking said host object and said egress IP object (col. 7, lines 15-32 and col. 16, lines 32-67).

Given the teaching of Heimendinger, it would have been obvious to one of ordinary skill in the art to modify Valencia in view of Puthiyandyil by implementing or incorporating "object-

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oriented” software to create and link objects (ingress, host and egress PPP objects) from the primary object classes in order to receive information from a source and transfer the information to a destination.

As per claim 19, Valencia discloses a network device for providing computer network access, said network device comprising:

- a first interface for receiving a PPP session creation request from a client, said PPP session creation request including a control protocol frame encapsulated therein (col. 4, lines 1-33 and col. 7, lines 55-65);
- a second interface for forwarding data packets from a PPP session over a Layer 2 tunnel (col. 4, lines 1-33 and col. 7, lines 55-65);
- a third interface for forwarding IP frames over a link other than said Layer 2 tunnel (col. 5, lines 56-65);
- a memory (col. 4, lines 21-28); and
- a processor coupled with said first interface, said second interface, said third interfaces, and said memory (col. 3, lines 41-56), said processor including:
  - i. a domain information determiner for obtaining user domain information associated with said PPP session creation request (col. 4, lines 45-65);
  - ii. a PPP session forwarder for setting up a Layer 2 tunnel according to a parameter contained in said control protocol frame and thereby forwarding data packets from a PPP session with said client over said Layer 2 tunnel (col. 4, lines 1-33 and col. 5, lines 35-42); and

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Although the system disclosed by Valencia shows substantial features of the claimed invention it does not explicitly disclose:

- iii. an IP frame forwarder for forwarding IP frames received from said client over a link other than said Layer 2 tunnel.

In an analogous art, Puthiyandyil discloses a distributed protocol processing and packet forwarding using tunneling protocols including:

- iii. an IP frame forwarder for forwarding IP frames received from said client over a link other than said Layer 2 tunnel (col. 8, lines 40-48, lines 60-67, col. 9, lines 1-19).

Given the teaching of Puthiyandyil, it would have been obvious to one of ordinary skill in the art at the time this invention to modify Valencia by forwarding IP data packets over the control LAN in order to process several PPP sessions simultaneously thereby enabling the network server to operate at higher levels of efficiency.

While the combined system of Valencia and Puthiyandyil, substantially discloses the invention as claimed discussed above, it does not explicitly disclose:

- iv. an object generator for creating objects in said memory, said object generator creating an ingress PPP object associated with an incoming PPP session, a host object associated with said client, an egress PPP object associated with Layer 2 tunneling through said second interface, and an egress IP object associated with IP-based forwarding through said third interface, said egress IP object being created based upon obtained user domain information;
- linking said ingress PPP object, said host object, and said egress PPP object; and

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- linking said host object and said egress IP object.

Heimendinger discloses an apparatus and method for reception and transmission of information using different protocols including:

- v. an object generator for creating objects in said memory, said object generator creating an ingress PPP object associated with an incoming PPP session, a host object associated with said client, an egress PPP object associated with Layer 2 tunneling through said second interface, and an egress IP object associated with IP-based forwarding through said third interface, said egress IP object being created based upon obtained user domain information (col. 7, lines 15-32 and col. 16, lines 32-67; The session object (ingress PPP object), 316, source object (host object) 312 and destination PPP object (egress PPP object) of Heimendinger meets the definition of the ingress, host and egress objects defined by the applicants' specification on pg. 12, lines 11-16. Heimendinger teaches that the objects are created are based on information received from the session object when dialing a number to establish a PPP connection);
- linking said ingress PPP object, said host object, and said egress PPP object (col. 7, lines 15-32 and col. 16, lines 32-67); and
- linking said host object and said egress IP object (col. 7, lines 15-32 and col. 16, lines 32-67).

Given the teaching of Heimendinger, it would have been obvious to one of ordinary skill in the art to modify Valencia in view of Puthiyandyil by implementing or incorporating "object-oriented" software to create and link objects (ingress, host and egress PPP objects) from the



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primary object classes in order to receive information from a source and transfer the information to a destination.

As per claim **33**, Valencia discloses an apparatus for providing computer network access, said apparatus comprising:

- a PPP session receiving interface (col. 4, lines 1-33 and col. 7, lines 55-65);
- a PPP session Layer 2 tunneling interface (col. 4, lines 1-33 and col. 7, lines 55-65);
- a memory (col. 4, lines 21-28);
- a processor coupled with said PPP session receiving interface, said PPP session Layer 2 tunneling interface, said IP frame forwarding interface, and said memory (col. 3, lines 41-56), said processor including:
  - i. a user domain information determiner (col. 4, lines 45-65);
  - ii. a PPP session forwarder (col. 4, lines 1-33 and col. 5, lines 35-42);

Although the system disclosed by Valencia shows substantial features of the claimed invention it does not explicitly disclose:

- an IP frame forwarding interface; and
  - iii. an IP frame forwarder.

In an analogous art, Puthiyandyil discloses a distributed protocol processing and packet forwarding using tunneling protocols including:

- an IP frame forwarding interface; and
  - iii. an IP frame forwarder (col. 8, lines 40-48, lines 60-67, col. 9, lines 1-19).

Given the teaching of Puthiyandyil, it would have been obvious to one of ordinary skill in the art at the time this invention to modify Valencia by forwarding IP data packets over the

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control LAN in order to process several PPP sessions simultaneously thereby enabling the network server to operate at higher levels of efficiency.

While the combined system of Valencia and Puthiyandyil, substantially discloses the invention as claimed discussed above, it does not explicitly disclose:

- i. an ingress PPP object associated with said PPP session receiving interface;
  - ii. a host object associated with a client requesting network access;
  - iii. an egress PPP object associated with said PPP session Layer 2 tunneling interface; and
  - iv. an egress EP object associated with said IP frame forwarding interface;
- and said processor includes:
- ii. an object generator responsive to said user domain information determiner;
  - iv. linking said ingress PPP object, said host object, and said egress PPP object; and
  - v. linking said host object and said egress IP object.

Heimendinger discloses an apparatus and method for reception and transmission of information using different protocols including:

- i. an ingress PPP object associated with said PPP session receiving interface;
- ii. a host object associated with a client requesting network access;
- iii. an egress PPP object associated with said PPP session Layer 2 tunneling interface; and

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iv. an egress EP object associated with said IP frame forwarding interface (col. 7, lines 15-32 and col. 16, lines 32-67; The session object (ingress PPP object), 316, source object (host object) 312 and destination PPP object (egress PPP object) of Heimendinger meets the definition of the ingress, host and egress objects defined by the applicants' specification on pg. 12, lines 11-16.

Heimendinger teaches that the objects are created are based on information received from the session object when dialing a number to establish a PPP connection); and said processor includes:

- ii. an object generator responsive to said user domain information determiner (col. 7, lines 15-32 and col. 16, lines 32-67);
- iv. linking said ingress PPP object, said host object, and said egress PPP object (col. 7, lines 15-32 and col. 16, lines 32-67); and
- v. linking said host object and said egress IP object (col. 7, lines 15-32 and col. 16, lines 32-67).

Given the teaching of Heimendinger, it would have been obvious to one of ordinary skill in the art to modify Valencia in view of Puthiyandyil by implementing or incorporating "object-oriented" software to create and link objects (ingress, host and egress PPP objects) from the primary object classes in order to receive information from a source and transfer the information to a destination.

As per claims **2**, **23** and **42**, Valencia discloses:

- wherein said setting up includes forwarding control protocol negotiations (abstract, col. 4, lines 45-49 and col. 5, lines 35-42).

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As per claims 3, 24 and 43, Valencia further discloses:

- receiving an IP address through said Layer 2 tunnel, said IP address having been assigned to said client (col. 6, lines 47-56); and
- transferring said IP address to said client (col. 6, lines 47-56).

As per claims 4, 25 and 44, Valencia discloses:

- wherein said user domain information is obtained from said PPP session creation request (col. 4, lines 45-65).

As per claims 5 and 45, Valencia discloses:

- wherein said user domain information is obtained using a user profile (col. 4, lines 45-65).

As per claims 6, 27 and 46, Valencia discloses:

- wherein said user domain information is obtained from user identification information associated with a physical connection of said PPP session creation request (col. 4, lines 45-65).

As per claims 7, 28 and 47, Valencia discloses:

- wherein said user domain information is obtained from a line number used by said client for transmitting said PPP session creation request (col. 4, lines 45-65).

As per claims 8, 29 and 48 Valencia discloses:

- wherein said user domain information is obtained from user identification information associated with a physical location of said client (col. 4, lines 45-65).

As per claims 9, 30, 34 and 49, Valencia in view of Puthiyandyil discloses the invention substantially as claimed.

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However, Valencia in view of Puthiyandyil does not explicitly disclose:

- maintaining a forwarding information base for said host object, said forwarding information base containing at least one association between a network address and either said ingress PPP object or said egress PPP object.

Heimendinger discloses an apparatus and method for reception and transmission of information using different protocols including:

- maintaining a forwarding information base for said host object, said forwarding information base containing at least one association between a network address and either said ingress PPP object or said egress PPP object (col. 7, lines 15-32, col. 16, lines 32-67 and col. 17, lines 1-12).

Given the teaching of Heimendinger, it would have been obvious to one of ordinary skill in the art to modify Valencia in view of Puthiyandyil by implementing or incorporating “object-oriented” software to create and link objects (ingress, host and egress PPP objects) from the primary object classes in order to receive information from a source and transfer the information to a destination.

As per claims **10, 31, 36** and **50**, Valencia in view of Puthiyandyil discloses the invention substantially as claimed.

However, Valencia in view of Puthiyandyil does not explicitly disclose:

- wherein said forwarding information base includes a default link to said egress PPP object.

Heimendinger discloses an apparatus and method for reception and transmission of information using different protocols including:

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- wherein said forwarding information base includes a default link to said egress PPP object (col. 7, lines 15-32, col. 16, lines 32-67 and col. 17, lines 1-12).

Given the teaching of Heimendinger, it would have been obvious to one of ordinary skill in the art to modify Valencia in view of Puthiyandyil by implementing or incorporating “object-oriented” software to create and link objects (ingress, host and egress PPP objects) from the primary object classes in order to receive information from a source and transfer the information to a destination.

As per claims 11, 32, 35 and 51, Valencia discloses:

- wherein said forwarding information base is stored in the form of a hash table (col. 12, lines 32-37).

As per claims 12, 20, 38 and 52, Valencia in view of Puthiyandyil discloses the invention substantially as claimed.

However, Valencia in view of Puthiyandyil does not explicitly disclose:

- wherein said creating an ingress PPP object includes creating an access PPP object associated with a PPP connection to said client via a first interface.

Heimendinger discloses an apparatus and method for reception and transmission of information using different protocols including:

- wherein said creating an ingress PPP object includes creating an access PPP object associated with a PPP connection to said client via a first interface (col. 7, lines 15-32 and col. 16, lines 32-67; The session object (ingress PPP object), 316, source object (host object) 312 and destination PPP object (egress PPP object) of Heimendinger meets the definition of the ingress, host and egress objects defined by the applicants’

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specification on pg. 12, lines 11-16. Heimendinger teaches that the objects are created are based on information received from the session object when dialing a number to establish a PPP connection).

Given the teaching of Heimendinger, it would have been obvious to one of ordinary skill in the art to modify Valencia in view of Puthiyandyil by implementing or incorporating “object-oriented” software to create and link objects (ingress, host and egress PPP objects) from the primary object classes in order to receive information from a source and transfer the information to a destination.

As per claims 13, 21, 39 and 53, Valencia in view of Puthiyandyil discloses the invention substantially as claimed.

However Valencia in view of Puthiyandyil does not explicitly disclose wherein said creating an egress PPP object includes:

- creating a first connection object containing a range of IP addresses;
- creating an aggregation PPP object associated with outgoing PPP frames; and
- creating a tunnel object associated with Layer 2 tunneling through a second interface.

Heimendinger discloses an apparatus and method for reception and transmission of information using different protocols including wherein said creating an egress PPP object includes:

- creating a first connection object containing a range of IP addresses;
- creating an aggregation PPP object associated with outgoing PPP frames; and
- creating a tunnel object associated with Layer 2 tunneling through a second interface (col. 7, lines 15-32 and col. 16, lines 32-67; The session object (ingress PPP object),

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316, source object (host object) 312 and destination PPP object (egress PPP object) of Heimendinger meets the definition of the ingress, host and egress objects defined by the applicants' specification on pg. 12, lines 11-16. Heimendinger teaches that the objects are created are based on information received from the session object when dialing a number to establish a PPP connection).

Given the teaching of Heimendinger, it would have been obvious to one of ordinary skill in the art to modify Valencia in view of Puthiyandyil by implementing or incorporating "object-oriented" software to create and link different objects from the primary object classes in order to receive information from a source and transfer the information to a destination.

As per claims 14 and 54, Valencia in view of Puthiyandyil discloses the invention substantially as claimed.

However, Valencia in view of Puthiyandyil does not explicitly disclose:

- wherein said first connection object includes a list of network addresses.

Heimendinger discloses an apparatus and method for reception and transmission of information using different protocols including wherein said creating an egress PPP object includes:

- wherein said first connection object includes a list of network addresses (col. 17, lines 1-12).

Given the teaching of Heimendinger, it would have been obvious to one of ordinary skill in the art to modify Valencia in view by Puthiyandyil implementing or incorporating a list of IP addresses in order to compare the IP address to the list of IP addresses which require PPP connections allowing a PPP destination object to be created to receive and transfer information.



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As per claims 15, 22, 40 and 55, Valencia in view of Puthiyandyil discloses the invention substantially as claimed.

However, Valencia in view of Puthiyandyil does not explicitly disclose wherein said creating an egress IP object includes:

- creating a second connection object containing a range of IP addresses; and
- creating a service object associated with IP frame forwarding through a third interface.

Heimendinger discloses an apparatus and method for reception and transmission of information using different protocols including wherein said creating an egress PPP object includes:

- creating a second connection object containing a range of IP addresses; and
- creating a service object associated with IP frame forwarding through a third interface (col. 7, lines 15-32 and col. 16, lines 32-67; The session object (ingress PPP object), 316, source object (host object) 312 and destination PPP object (egress PPP object) of Heimendinger meets the definition of the ingress, host and egress objects defined by the applicants' specification on pg. 12, lines 11-16. Heimendinger teaches that the objects are created are based on information received from the session object when dialing a number to establish a PPP connection).

Given the teaching of Heimendinger, it would have been obvious to one of ordinary skill in the art to modify Valencia in view of Puthiyandyil by implementing or incorporating "object-oriented" software to create and link different objects from the primary object classes in order to receive information from a source and transfer the information to a destination.

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As per claims **16** and **56**, Valencia in view of Puthiyandyil discloses the invention substantially as claimed.

However, Valencia in view of Puthiyandyil does not explicitly disclose:

- wherein said second connection object includes a list of network addresses.

Heimendinger discloses an apparatus and method for reception and transmission of information using different protocols including wherein said creating an egress PPP object includes:

- wherein said second connection object includes a list of network addresses (col. 17, lines 1-12).

Given the teaching of Heimendinger, it would have been obvious to one of ordinary skill in the art to modify Valencia in view of Puthiyandyil by implementing or incorporating a list of IP addresses in order to compare the IP address to the list of IP addresses which require PPP connections allowing a PPP destination object to be created to receive and transfer information.

As per claims **17** and **57**, Valencia in view of Puthiyandyil discloses the invention substantially as claimed.

However, Valencia in view of Puthiyandyil does not explicitly disclose further maintaining a forwarding information base for said host object, said forwarding information base containing:

- an association between said access PPP object and an address of said client; and
- a default link to said aggregation PPP object.

Heimendinger discloses an apparatus and method for reception and transmission of information using different protocols including wherein said creating an egress PPP object includes:

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- an association between said access PPP object and an address of said client; and
- a default link to said aggregation PPP object (col. 7, lines 15-32, col. 16, lines 32-67 and col. 17, lines 1-12).

Given the teaching of Heimendinger, it would have been obvious to one of ordinary skill in the art to modify Valencia in view of Puthiyandyil by implementing or incorporating “object-oriented” software to create and link objects (ingress, host and egress PPP objects) from the primary object classes in order to receive information from a source and transfer the information to a destination.

As per claims 18 and 58, Valencia in view of Puthiyandyil discloses the invention substantially as claimed.

However, Valencia in view of Puthiyandyil does not explicitly disclose:

- wherein said creating said first connection object includes adding into said forwarding information base an association between said aggregation PPP object and a corresponding network address, and
- said creating said second connection object includes adding into said forwarding information base an association between said service object and a corresponding network address.

Heimendinger discloses an apparatus and method for reception and transmission of information using different protocols including wherein said creating an egress PPP object includes:

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- wherein said creating said first connection object includes adding into said forwarding information base an association between said aggregation PPP object and a corresponding network address, and
- said creating said second connection object includes adding into said forwarding information base an association between said service object and a corresponding network address (col. 7, lines 15-32 and col. 16, lines 32-67; The session object (ingress PPP object), 316, source object (host object) 312 and destination PPP object (egress PPP object) of Heimendinger meets the definition of the ingress, host and egress objects defined by the applicants' specification on pg. 12, lines 11-16. Heimendinger teaches that the objects are created are based on information received from the session object when dialing a number to establish a PPP connection).

Given the teaching of Heimendinger, it would have been obvious to one of ordinary skill in the art to modify Valencia in view of Puthiyandyil by implementing or incorporating "object-oriented" software to create and link different objects from the primary object classes in order to receive information from a source and transfer the information to a destination.

As per claim 26, Valencia discloses:

- wherein said domain information determiner obtains said user domain information using a service profile (col. 4, lines 45-65).

As per claim 37, Valencia in view of Puthiyandyil discloses the invention substantially as claimed.

However, Valencia in view of Puthiyandyil does not explicitly disclose wherein said forwarding information base further includes:

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- an association between said egress IP object and a corresponding network address .

Heimendinger discloses an apparatus and method for reception and transmission of information using different protocols including wherein said creating an egress PPP object includes:

- an association between said egress IP object and a corresponding network address (col. 7, lines 15-32, col. 16, lines 32-67 and col. 17, lines 1-12).

Given the teaching of Heimendinger, it would have been obvious to one of ordinary skill in the art to modify Valencia in view of Puthiyandyil by implementing or incorporating “object-oriented” software to create and link objects (ingress, host and egress PPP objects) from the primary object classes in order to receive information from a source and transfer the information to a destination.

### *Response to Arguments*

3. Applicant's arguments filed October 12, 2004 have been fully considered but they are not persuasive.

#### **The Office notes the following arguments:**

- a. Neither Valencia nor Puthiyandyil teach forwarding packets from a client over BOTH a Layer 2 tunnel for a client and another link.
- b. Heimendinger speaks only about destination objects, which are based on determined destinations. However, there is no indication that these destination represent different types of connections, let alone a layer 2 tunnel and a non-layer 2 tunnel.

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c. It is noted that Valencia and the current Application are commonly owned. Since Valencia in fact represents the prior art upon which the current Application is based, the citations in the Office Action must be in error and should be withdrawn along with the rejection.

**In response to:**

(a)-(c), Valencia, Puthiyandyil and Heimendinger disclose substantially the invention as broadly claimed. In addition, the applicant asserted that neither Valencia, Puthiyandyil and Heimendinger disclose the limitations of claim 1. The examiner disagrees with the precedent assertion. The examiner kindly submits that the applicants misread the applied references. However, Applicants are interpreting the claims very narrow using the specification without considering the broad teaching of the reference stated in the rejection. The aforementioned assertion forwarding packets from a client over BOTH a Layer 2 tunnel for the client and another link is not disclose by Valencia nor Puthiyandyil with regard to the invention of claim was supported by objective factual evidence and was not found to be of substantial evidentiary value. The examiner has provided in the last office action of the parent application, a convincing line of reasoning as to why the artisan would have found the claim invention to have been obvious in light of the teachings of the cited references. Valencia teaches a layer 2 forwarding protocol that allows a user to establish a tunnel connection in order to send frames over a network (col. 5, lines 48-65). On the other hand, Puthiyandyil teaches forwarding packets over a network using different tunnel protocols such as Layer 2 Tunneling, Point-to-Point Tunneling or Layer 2 forwarding (col. 8, lines 40-48, lines 60-67, col. 9, lines 1-19 and col. 16, lines 46-50). Therefore, Puthiyandyil provides motivation to combine with Valencia since Puthiyandyil allows

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a user to forward packets over a link (PPP tunneling) other than Layer 2 tunnel. However, Heimendinger allows a user to create source and destination PPP objects when establishing an Internet connection (col. 16, lines 20-45, lines 56-67 and col. 17, lines 1-12). Therefore, Heimendinger teach creating an ingress and egress PPP objects and a host object. Applicants are reminded that the examiner is entitled to the broadest reasonable interpretation of the claims. The Applicants always have the opportunity to amend the claims during prosecution and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. In re Prater 162 USPQ 541, 550-51 (CCPA 1969).

Applicants asserted that combining Valencia, Puthiyandyil and Heimendinger does not describe forwarding packets from a client over BOTH a Layer 2 tunnel for the client and another link. In response, the examiner disagrees with the preceding allegations. However, Applicants are interpreting the claim very narrow without considering the broad teaching of the references used in the rejection. Applicants are reminded that the test for obviousness is not whether the features of one reference may be bodily incorporated into the other to produce the claimed subject matter but simply what the combination of references makes obvious to one of ordinary skill in the pertinent art. Furthermore, the examiner recognizes that references cannot be arbitrarily combined and that there must be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references. In re Nomiya USPQ 607 (CCPA 1975). On the other hand, there is no requirement that a motivation to make the modification be expressly articulated. The test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. In re

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McLaughlin, 170 USPQ 209 (CCPA 1971). References are evaluated by what they suggest to one versed in the art, rather than by their specific disclosures. In re Bozek, 163 USPQ 545 (CCPA) 1969. As per Applicants' arguments that all claim limitations be taught or suggested by the prior art, Applicants appear to misinterpret the guidance given under MPEP 2142. In particular, references are evaluated by what they suggest to one versed in the art, rather than by their specific disclosures. In re Bozek, 163 USPQ 545 (CCPA) 1969.

There are numerous court decisions supporting the position given above. The issue of obviousness is not determined by what the references expressly state but by what they would reasonably suggest to one of ordinary skill in the art, as supported by decisions In re Delisle 406 Fed 1326, 160 USPQ 806; In re Kell, Terry and Davies 208 USPQ 871; and In re Fine, 837 F.2d 1071, 1074, 5 USPQ 2d 1596, 1596, 1598 (Fed. Cir. 1988) (Citing In re Lalu, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed. Cir. 1988)). Further, it was determined In re Lamberti et al., 192 USPQ 278 (CCPA) that:

- (a) obviousness does not require absolute predictability;
  - (b) non-preferred embodiments of prior art must also be considered; and
  - (c) the question is not express teaching of references, but what they would suggest.
- (B). According to In re Jacoby, 135 USPQ 317 (CCPA 1962), the skilled artisan is presumed to know something more about the art than only what is disclosed in the applied references. In re Bode, 193 USPQ 12 (CCPA 1977), every reference relies to some extent on knowledge of persons skilled in the art to complement, that which is disclosed therein.

Furthermore, the skilled artisan would not consider the prior art embodiments in a vacuum, but would have had the motivation to combine the advantageous features of the prior art



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in the manner purported by the examiner for the reasons and motivations given above as well as in the prior office action. Thus the combined teachings of Valencia, Puthiyandyil and Heimendinger when considered as a whole to one of ordinary skill in the art make obvious that Applicants dispute. Hence the 35 U.S.C 103 is hereby sustained.

### *Conclusion*

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaShonda T. Jacobs whose telephone number is 703-305-7494. The examiner can normally be reached on 8:30 AM - 5:00 PM.

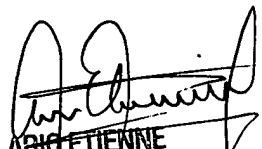
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on 703-308-7562. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LaShonda T. Jacobs  
Examiner  
Art Unit 2157

ltj  
March 1, 2005

  
ARIC ETIENNE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100